REMARKS

Claims 1-11 stand rejected for informalities and claims 1-14 stand rejected on prior art grounds. This amendment adds claim 15.

Specifically, claims 1, 3-5, and 11-12 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Nicol (US 6,757,367). Claim 2 Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nicol in view of Leiper (U.S. Pat. No. 6,112,234). Claims 6-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nicol in view of Anandakumar. Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nicol in view of Bechtolsheim (U.S. Pat. No. 6,515,963). Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nicol in view of Fayad.

These rejections are respectfully traversed in view of the following discussion.

I. THE 35 USC 112 REJECTIONS

Claim 1 is amended to show that the computing device is operably connected to each of the modems through a network and to provide antecedent basis for "second connecting means." In view of the foregoing amendments, the Examiner is respectfully requested to review and rescind this rejection.

II. THE PRIOR ART REJECTIONS

THE NICOL REFERENCE

The Examiner alleges that claims 1, 3-5, and 11-12 are anticipate by Nicol. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by Nicol.

Nicol discloses a system using gateways over a network that includes a data relay mode to enable the transmission of modem data signals over a packet based system, such as a voice over IP (VOIP) system. (col. 27, lines 20-40). The Examiner alleges that col. 33, lines 54-64 of Nicol disclose "means for determining the transport efficiency of the packet network by comparison of the known throughput rate of the reference modem data to the determined throughput rate of the received modem data stream," as recited in claim 1. However, this is incorrect because Nicol's disclosure merely explains how to connect two modems through gateways over a network, not the claimed invention of how to measure and compare the data rate between two modems that are already connected.

Specifically, Nicol uses a "rate negotiator 218" that "synchronizes the connection rates at the network gateways (col. 28, lines 50-51) so that "after a V.34 relay connection is established, the calling modem and the answer modem freely negotiate a data rate at each end of the network...." Each remote gateway compares the far end bit rate to the rate transmitted by each gateway and both use the minimum of the two rates as the preferred rate. (col. 33, lines 54-61). The claimed invention performs the data

exchange rate test after the two modems and gateways have reached a steady-state: "after a steady-state connection has been established between said first means and said second means," as recited in claim 1. Nicol's rate negotiation is being performed during modem connection operations or re-connection operations. This is a related feature of claim 4, wherein the claimed invention tests the system "after said gateways have negotiated appropriate protocols."

No testing of a reference exchange rate to test the efficiency of the network is taught or suggested by Nicol. Nicol's disclosure does measure an efficiency in the network system using reference data transfer rates from one gateway to another. Nicol is, instead, a way to connect two modems to perform a rate negotiation and synchronization between them so that the gateways and modems can communicate at the same data rate. This is simply setting up the modems to communicate data. As described in claims 1 and 14 and in an exemplary embodiment on page 16-17 of the Application, a computer device 34 operably connects to both the sending and receiving modems and runs two terminal programs. For one of the programs, the computer provides a reference modem data stream at a known generation rate from one of the gateways connected to a modem. Then, on the receiving gateway, it measures the result of the reference modem data rate at a modem stream reception rate. This is not a rate negotiation sequence. Here, the modems are already synchronized and data exchange rates negotiated and the file used to measure efficiency is "independent from setup and protocol" files of the first and second connecting means, as recited in claim 1.

The means for comparison of the reference to the reception data rates is different from Nicol because the claimed invention does not setup a data rate negotiation between two modems. In the present invention, a third computing device is transmitting independent files across the packet network through the modems and measures the reception data rates versus the generation data rates (see claims 10-11). Nicol fails to teach or suggest such a measurement of efficiency. The test can be performed using the Z-modem protocol. The Examiner admits that Nicol does not perform such tests because Nicol does not teach or suggest measurements such as those using the Z-modem protocol. Examiner alleges that Nicol combined with the disclosure of Leiper teaches the claimed invention, however this is not correct. The Application does not claim invention of this protocol functionality but rather the use of the well-known protocol in order to facilitate the efficiency measurements through the claimed apparatus and methods.

The Examiner further admits that Nicol fails to disclosure the use of a network simulator to measure network efficiency, as recited in claims 6-10, and that Anandakumar teaches the use of a network simulator to determine transmission performance of voice transmissions. However, Anandakumar fails to makeup for Nicol's deficiencies. Anandakumar discloses a process for sending packets for voice over IP (VoIP), voice over packet (VOP) and media over packet networks. (Anandakumar, col. 5, lines 55-60). Anandakumar, a voice transmission disclosure, would not have been combined with Nicol's disclosure for modem data synchronization

and rate negotiation because the two operate differently. Further, controlling jitter and delays and packet loss as recited in Anandkumar is merely a general statement that could be made for any packet network in the world. The claimed invention includes comparing throughput rates of a "reference modem data stream at a known throughput rate" and a "determined throughput rate of said received modem data stream," as recited in claim 1. Neither reference has motivation or suggestion to combine in order to compare two modem data rates, as described in the claims, in order to determine a transport efficiency through a packet network.

Anandakumar discloses a "path diversity" using multiple paths in a network to send the same packet data for a VoIP network using real-time voice. This is a far, far different system than is needed for a modem data relay system that requires modulation and demodulation of data signals. The passages from Anandakumar, however, merely disclose estimating a transmission rate and jitter rate on a single transmission of a VoIP system.

First, QoS features of a VoIP system cannot be analogized to a modem relay system. Voice packets have special necessities of coding according to specific voice codecs, packet loss concealment, playout, and jitter buffers in a playout unit that are not related to a pure data transmission between modems. No voice quality is being measured in the claimed invention, only efficiency of transfer of files between two modems after the modems have reached steady-state and negotiated data rates. Once this is accomplished in a simulated network, the claimed invention is an improvement

over any prior art efficiency testing method because "parameters can be varied to selectively simulate packet loss" and other features of a network, as recited in claim 9, and other parameters can be controlled to test the efficiency of the network setup between the modems, such as "packet loss and packet delay" by controlling all other network aspects. The alleged combination does not provide for such features.

The Examiner further alleges Nicol in view of Bechtolsheim discloses determining the average rate for a given protocol with given network conditions in claim 13. Bechtolsheim is a disclosure for managing traffic flow in routers and switches using classic network buffering and traffic policing. (col. 1, lines 5-10; lines 32-40; col. 2, lines 11-15). One skilled in the art would not have combined Nicol with Bechtolsheim as alleged. Nicol's disclosure is for a modem relay setup and is unrelated to policing or buffering packets from a "variety of traffic sources or flows presented to the router/switching device . . . [where] [t]hese flows each consist of multiple packets of data, in a variety of sizes and presented at a variety of rates . . . and different protocols." (Bechtolsheim, col. 1, lines 33-40). Bechtolsheim is a far different technique than is than described by the claimed invention and even disclosed by Li. Combining these two references is clearly hindsight. However, even if combined, the alleged combination would not teach or suggest the claimed invention.

The Examiner admits that "Nicol fails to disclose where the steps of collecting a group of data representative of the network throughput efficiency under a number of network conditions and corresponding to a plurality of known file transfer protocols;

determining the network efficiency . . . and generating a representation of the relationship between modem relay system design and packet transport efficiency . . ." The combination does not provide any advantages over Nicol alone. A dynamic buffer management scheme for a data communications device of Bechtolsheim is not a disclosure that helps to distinguish determining efficiency between two modems under a number of network conditions and according to different file transfer protocols. Bechtolsheim is a disclose for *traffic shaping* on a network. As described in *Designing Large-Scan LANS* by Kevin Dooley (O'Reilly & Assoc., 2002), p. 265-266,

> There are two main ways to control the rate of flow of traffic. A device can either throw away packets whenever the specified rate limit is reached, or it can buffer packets and release them at the specified rate. The process of discarding packets that exceed a bandwidth parameter is usually called *policing*. Saving packets for future transmission is called *buffering*.

The claimed invention is for modem relay technology, not designing LANs using buffering and policing techniques. For at least the reasons above, claim 13 is not rendered obvious by the alleged combination.

For at least the reasons stated above, Applicant respectfully submits that the Examiner's references fail teach or suggest claims 1-14 and these claims are fully patentable over the cited references. Based on the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

III. FORMAL MATTERS AND CONCLUSION

Drawing 13 was amended to correct a typographical error regarding the "computing device" as described in the specification. The "PSTN line" was canceled from claim 14 and therefore no amendment was performed to the drawings.

Applicant submits that claims 1-15, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above Application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner may contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any fees associated with this communication to Client's Deposit Account No. 20-0668.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 11th day of April, 2005.

Kendal M. Sheets 4-11-05 Date

AMENDMENTS TO THE DRAWINGS:

Figure 13 has been revised to show "computing device 34." The reference number for block "PC Z-Modem protocol" in Figure 13 was originally mis-labeled and has been changed from "39" to "34." Please replace Figure 13 with the revised Figure 13.